Strasburg Reservoir
Fisheries Management Report
2003

Strasburg Reservoir is a 5 acre flood control/water supply impoundment on the headwaters of Little Passage Creek near Signal Knob on Massanutten Mountain, Shenandoah County. The reservoir is owned by the Town of Strasburg and was historically used for water supply and was closed to fishing. The impoundment is surrounded by the George Washington National Forest. The reservoir is no longer used for water supply and was opened for fishing in 1996. The reservoir lies at approximately 1,450 feet msl and has a maximum depth of around 30 feet. Strasburg Reservoir offers a "remote" setting and can only be accessed on foot via a gated road (2 miles) and hiking trails.

Department biologists planned to develop a fishery in the reservoir, but discovered that water quality was unsuitable due to acidic conditions. Acid deposition in the form of rain and snow falling in the watershed over time depleted the land's buffering capacity and caused the impoundment to become acidic. Initial fish surveys revealed no fish in the stream entering the reservoir and only a few pumpkinseed sunfish in the reservoir. With the assistance of chemists from James Madison University (JMU) it was determined that the acidic conditions needed to be neutralized before a fishery could be established. In 1997 Little Passage Creek above the reservoir was treated with limestone sand. This method has proven to be successful in neutralizing acidic streams and reservoirs in other locations in Virginia. Liming has improved the water quality of Strasburg Reservoir to allow fish survival. JMU researchers monitor the water quality parameters of the reservoir quarterly. The stream entering the reservoir is limed periodically by the United States Forest Service as acidic conditions return. Beginning in 1995, fingerling brook trout were stocked annually into the reservoir to determine if a trout fishery could be established. The goal was to produce a put-grow-take trout fishery. However, this management strategy has not been successful. Biologists have sampled the reservoir on several occasions to access trout survival and growth. Trout are not surviving the summer months in the reservoir. The impoundment exhibits only marginal trout habitat during dry/hot summers. Researchers from JMU have also collected temperature and dissolved oxygen data from the reservoir each summer since 1995. Trout require water temperatures <70° F and dissolved oxygen levels >5 mg/l to survive. During several dry/hot summers temperature and dissolved oxygen levels have been unfavorable for trout survival. In addition, the acidic conditions before liming left the reservoir virtually "sterile" and void of even insect life. Aquatic insects and other invertebrates may not have fully recolonized the reservoir in numbers to sustain the stocked trout. Biologists have also received reports that these hungry trout are "easily" caught from the reservoir. Trout may be being over-harvested by anglers or even poached. If the reservoir cannot support a trout population then warmwater fish could be stocked in the lake. A decision on which fish management scenario to pursue will be made in late 2003.

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